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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,018	01/03/2001	Motoshi Ito	YAMAP0748US	3434

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EXAMINER

HENNING, MATTHEW T

ART UNIT PAPER NUMBER

2131

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/754,018

Applicant(s)

ITO ET AL.

Examiner

Matthew T Henning

Art Unit

2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-9 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 03 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

This action is in response to the communication filed on 01/03/2001.

DETAILED ACTION

1. Claims 1-9 have been examined.

Title

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Priority

3. The application has been filed under Title 35 U.S.C §119, claiming priority to Japanese application 2000005501, filed January 14, 2000.
4. The effective filing date for the subject matter defined in the pending claims in this application is January 14, 2000.

Information Disclosure Statement

5. No IDS has been submitted for this application

Drawings

6. The drawings filed on 01/03/2001 are acceptable for examination proceedings.

Specification

7. The examiner would like to note the applicant's choice to be his own lexicographer for the term "descramble" which the applicant defines as "processing of creating a concealed program" on lines 22-23 of page 8 of the disclosure.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 3-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 3 recites "a concealed program" on both lines 5 and 7. It would be unclear, to the ordinary person skilled in the art, whether these are two separate programs or if they are in fact the same program, which renders the scope of the claim unclear. Therefore, claim 3 is rejected for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention.

11. Claims 4-5 are rejected by virtue of their dependency on claim 3.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 3, and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirotani (U.S. Patent Number 5,982,887) hereinafter referred to as Hirotani.

14. Claim 1 recites a control program for controlling an operation of a microprocessor (See Hirotani Col. 4 Paragraph 3), the control program comprising a concealed program (See Hirotani Col. 3 Paragraph 7), recoverable by data scramble circuit (See Hirotani

Col. 3 Paragraph 8) and a non-concealed program (See Hirotani Fig. 1 Element 15 wherein only part of the program is encrypted).

15. Claim 3 recites a device, comprising: a microprocessor (See Hirotani Fig. 3 Element 21), a program memory for storing a control program for controlling an operation of the microprocessor (See Hirotani Fig. 3 Element 25), the control program including a concealed program (Element 25 Encrypted Section) and a non-concealed program (Element 25 Program section); a rewritable memory for storing a concealed program copied from the concealed program stored in the program memory (See Hirotani Col. 6 Paragraph 2 wherein it was inherent that the encrypted program was stored, at least temporarily in a rewritable memory in the CPU, before decryption), and a data scramble circuit for recovering the concealed program stored in the rewritable memory as a recovered program (See Hirotani Col. 6 Paragraphs 2-3).

16. Claim 6 recites a method for creating a control program, comprising: a program descramble step of descrambling a portion of a control program by reverse scramble of a data scramble circuit in a device to be controlled, thereby creating a concealed program as a portion of the control program (it was inherent in the invention of Hirotani that a portion of the control program was encrypted in order for the control program to have taken on the form of Element 25 in Fig. 3); and a program storing step of storing the control program including the concealed program in a program memory so that the control program controls an operation of a microprocessor in the device to be controlled (See Hirotani Col. 5 lines 39-44).

17. Claim 7 recites that the program descramble step includes the steps of: creating a non-concealed program (it was inherent that the program was created at some point in order for the program to have been encrypted and downloaded); and synthesizing the concealed program and the non-concealed program into the control program (See Hirotani Fig. 3 Element 25 wherein the encrypted and non-encrypted programs are together as the program stored in program memory).

18. Claim 8 recites a method for operating a control program, comprising: a program copying step of copying a concealed program which is a portion of the control program (See Hirotani Fig. 3 Element 25) from a program memory into a rewritable memory (See rejection of claim 3); a program recovery step of recovering the concealed program copied by the program copying step as a recovered program by a data scramble circuit (See rejection of claim 3 above); and a program execution step of executing a non-concealed program included in the control program and the recovered program (See Hirotani Col. 6 Paragraph 5).

19. Claim 9 recites a program erasure step of erasing the recovered program from the rewritable memory (See Hirotani Col. 6 Paragraph 6).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Art Unit: 2131

Patentability shall not be negated by the manner in which the invention was made.

21. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirotani as applied to claim 1 above, and further in view of Oualline ("Practical C++ Programming") and Ooi et al. (U.S. Patent Number 5,226,129) hereinafter referred to as Ooi.

Hirotani disclosed a recoverable encrypted program to be run on a microprocessor (See rejection of claim 1 above) but Hirotani failed to disclose the composition of the program as well as the addressing mode of the program. However, Hirotani did disclose that the encrypted program could have been downloaded over a network (See Hirotani Col. 3 Lines 27-29).

Oualline teaches that in order to conserve memory space, commonly used code can be grouped into functions such that the code can be used repeatedly (See Oualline Page 133 Paragraph 1).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Oualline to create functions in the encrypted program of Hirotani. This would have been obvious because the ordinary person skilled in the art would have been motivated to make the program as compact as possible in order to conserve memory and also to limit the amount of information needing to be transferred over the network to the system of Hirotani.

Ooi teaches that in order easily make a program portable, the program should use relative addressing (See Ooi Col. 1 Lines 27-33). This would have been obvious

Art Unit: 2131

because the ordinary person skilled in the art would have been motivated to minimize the modification of the code required to relocate the program, and thus increase portability.

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Ooi in the program of Hirotani by providing the program with relative addressing.

It was inherent in the combination of Hirotani, Oualline, and Ooi that relative address lists for the functions of the program were provided in the program at prescribed, or predetermined, location, in order for the processor of Hirotani to be able to locate the functions called throughout the program.

22. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hirotani, Oualline, and Ooi, as applied to claim 3, for the same reasons as claim 2 above.

23. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirotani as applied to claim 3 above, and further in view of Smith (Memory error Detection and Correction).

Hirotani disclosed a system for recovering and executing an encrypted program (See rejection of claim 3 above), but failed to disclose error correction during decryption. However, Hirotani did disclose that the encrypted program was stored in a memory (See Hirotani Col. 3 Line 30).

Smith teaches that error correction codes (ECC) in a storage system can be used to not only detect errors, but to also correct errors in the stored data words (See Smith Page 1 Paragraph 7).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Smith in the invention of Hirotsu by providing error correction codes to each word in the program, and using the microprocessor to detect and correct errors in the program using the ECCs. This would have been obvious because the ordinary person skilled in the art would have been motivated to ensure that the integrity of the program in memory was maintained.

Conclusion

24. Claims 1-9 have been rejected.

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Lumley (U.S. Patent Number 4,306,289) disclosed a computing system capable of executing encrypted program code.

b. Curran et al. (U.S. Patent Number 4,525,599) disclosed a system for protecting software by using an encrypted addressing mode as well as program encryption.

c. Kulakowski et al. (U.S. Patent Number 5,394,534) disclosed a data compression system utilizing error correction codes.

Art Unit: 2131

d. Ronning (U.S. Patent Number 5,870,543) disclosed a software protection system utilizing an encrypted program package.

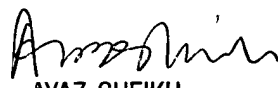
e. Ashe (U.S. Patent Number 6,014,745) disclosed a method for protecting proprietary programs and data utilizing encryption and key cards.

26. Please direct all inquiries concerning this communication to Matthew Henning whose telephone number is (703) 305-0713. The examiner can normally be reached Monday-Friday from 9am to 4pm, EST.

If attempts to reach examiner by telephone are unsuccessful, the examiner's acting supervisor, Ayaz Sheikh, can be reached at (703) 305-9648. The fax phone number for this group is (703) 305-3718.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.


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